M

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/325,110	06/03/1999	CARL S. ANSELMO	PD-990033	2415

20991 7590 11/30/2004

THE DIRECTV GROUP INC
PATENT DOCKET ADMINISTRATION RE/R11/A109
P O BOX 956
EL SEGUNDO, CA 90245-0956

EXAMINER	
CHOW, CHARLES CHIANG	
ART UNIT	**PAPER NUMBER**
2685	

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/325,110	ANSELMO, CARL S.	
	Examiner	Art Unit	
	Charles C. Chow	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-13 and 15-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-13 and 15-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8/23/04*.

4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *8/20/04* .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Office Action for Amendment
Received on 6/30/2004

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-7, 10-13, 15-17, 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pizzicaroli et al. (US5,813,634) in view Brown et al. (US 6,157,621).

Regarding **claim 1**, Pizzicaroli et al. (Pizzicaroli) teaches a system for providing high frequency data communications in satellite based communications network (Fig. 1, satellite cellular communication system, col. 1,lines 6-10, col. 3, lines 24-49), the system comprising a plurality of communication satellites (orbiting satellites 12, spare satellite in orbit 55, having spare orbit 53, for back up failing satellite, in Fig. 1, abstract), each having uplink and downlink antennas capable of receiving and transmitting a plurality of signals (the uplinks, downlinks, of the subscriber-link transceivers antennas 32, and earth-link transceiver antenna 37, for each satellite 12, Fig. 2), each of said satellites having a communication control circuit (the controller 34, Fig. 2), at least one of said satellites (12) being a reconfigurable satellite (the orbiting spare satellite located in a monitor orbit 55 for replacing failing satellite with cross links 23 for minimizing any disruption to service communication, abstract, the

step 720, Fig 5, for placing the spare satellite in service). Pizzicaroli teaches a controller (34) located on said satellite coupled to communications control circuit (controller 34 coupled to the control circuit in transceivers 30, 35, Fig. 2), for controlling a frequency reconfiguraion of said communication control circuit (controller 34 manipulates the satellite operation, for replacing failing satellite, by utilizing the variables, table, database, in memory 36, col. 4, lines 34-43). Pizzicaroli fails to teach the programmable frequency synthesizer in response to said tuning information, the routing table storing tuning information, for the frequency reconfiguration. However, Brown et al. (Brown) teaches a controller 1102 (Fig. 83) on board of a satellite for controlling communication (col. 45, lines 31-36), the routing table having the synthesizer tuning information (the synthesizer 560 for providing channel carrier to frequency controller 562, and then to controller Mux/Demux modem 564 for transmit beam forming 568 in col. 19, lines 15-30; the cell ID map 624 has channel information 626 for transmit beam B, and transmission system determines the frequency used for transmission of packet 422 in col. 21, line 47 to col. 22, line 31, for the routing table 624 having frequency assignment, tuned by synthesizer 562). Brown considers the utilization of the on-board computer, the adaptive routing processor for selecting the best route pathway according to routing table (col. 17, line 8-42; col. 43, line 46 to col. 44, line 9). Brown provides the solution for selecting of the best routing path utilizing the route information to change the synthesizer frequency tuning, as shown above, such that the route could be the best path. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pizzicaroli with Brown's routing information for synthesizer, such that the best route path could be selected, by tuning the synthesizer.

Regarding **claims 3, 10, 12**, Brown teaches the up converter and down converter for the communication control circuit (encoder 304, mixer 280, Fig. 27-28).

Regarding **claims 4, 11**, Pizzicaroli teaches the communication control circuit comprising a transponder (the relaying data through satellite 12 between any tow subscriber units 26, col. 4, lines 13-17).

Regarding **claim 5,** Brown teaches the up converter and down converter, as shown in claim 3, and Pizzicaroli teaches the transponder as shown in claim 5.

Regarding **claim 6**, Brown taught above in claim 1 the time division multiple access switch (in col. 61, lines 24-31, for the communication control circuit).

Regarding **claim 7**, Brown taught the packet switch 1306 (Fig. 112A; col. 60, line 65 to col. 61, line 11).

Regarding **claim 15**, Pizzicaroli teaches the reconfiguration coupled to the communication circuit for reconfiguring the communication control circuit (controller 34 coupled to the control circuit in transceivers 30, 35, Fig. 2), for controlling a frequency reconfiguraion of said communication control circuit (controller 34 manipulates the satellite operation, for replacing failing satellite, by utilizing the variables, table, database, in memory 36, col. 4, lines 34-43). Pizzicaroli fails to teach the beam forming network. However, Brown teaches the communication control circuit for controlling communications of the satellite (the circuitry in Fig. 27-28 for controlling the communications of the satellite, via communication processor 482 in Fig. 38), the payload circuit (in Fig. 27-28, 38, Fig. 42) for a satellite comprising receiver array (270, 272, Fig. 27), a receive beam forming network (554 in Fig. 42) a transmit array (298, 300 in Fig. 28), a transmit beam forming network (568, Fig. 42,

col. 19, lines 15-30). Brown teaches the reconfiguration circuit comprising a programmable frequency synthesizer, an on-board computer and a routing table having the synthesizer tuning information (the steering computer 550 in Fig. 42; and in Fig. 37, the routing information is stored in the cache memory 420, Fig. 37; the utilization of the routing table 1120 for the routers, in Fig. 85, 86; the synthesizer 284,308, in Fig. 27-28, in the reconfiguring circuit, for tuning to the frequency according to the routing table 1120). Brown considers the utilization of the on-board computer, the adaptive routing processor for selecting the best route pathway according to routing table (col. 17, line 8-42; col. 43, line 46 to col. 44, line 9). Brown provides the solution for selecting of the best routing path utilizing the route table information to change the synthesizer frequency tuning, as shown above, such that the route could be the best path. Brown teaches the solution to select the best route path utilizing the route table information to change the synthesizer frequency tuning. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pizzicaroli with Brown's synthesizer, such that the best route path could be selected, by tuning the synthesizer.

Regarding **claim 16**, Brown taught above in claim 1 the time division multiple access switch (in col. 61, lines 24-31, for the communication control circuit).

Regarding **claim 17**, Brown taught the packet switch 1306 (Fig. 112A; col. 60, line 65 to col. 61, line 11).

Regarding **claim 28**, Pizzicaroli teaches a method of configuring a satellite comprising deploying a reconfigurable satellite (the spare satellite located in a monitor orbit 55 for replacing failing satellite, abstract), transmitting reconfiguration instruction to satellite (the

control ground station 45, Fig. 3, communicates with satellite for the controls and management of the control functions for satellite, col. 4, lines 44-63). Pizzicaroli fails to teach the storing frequency tuning information in a routing table, reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table. However, Brown teaches the storing frequency tuning information in a routing table, reconfiguring the frequency configuration of the payload of the reconfigurable satellite in response to the tuning information in the routing table (the steering computer 550 in Fig. 42; and in Fig. 37, the routing information is stored in the cache memory 420, Fig. 37; the utilization of the routing table 1120 for the routers, in Fig. 85, 86; the synthesizer 284,308, in Fig. 27-28, in the reconfiguring circuit, for tuning to the frequency according to the routing table 1120). Brown considers the utilization of the on-board computer, the adaptive routing processor for selecting the best route pathway according to routing table (col. 17, line 8-42; col. 43, line 46 to col. 44, line 9). Brown provides the solution for selecting of the best routing path utilizing the route table information to change the synthesizer frequency tuning, as shown above, such that the route could be the best path. Brown teaches the solution to select the best route path utilizing the route table information to change the synthesizer frequency tuning. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pizzicaroli with Brown's synthesizer, such that the best route path could be selected, by tuning the synthesizer.

Regarding **claim 29**, Brown teaches the reconfiguring the payload comprising the changing of the amplitude or phase coefficient of the beam in response to the tuning information in the

routing table (the beams steering using various microstrip phase delay line in col. 14, line 51 to col. 15, line 4; the beam steering with independently controlling of directivity gain and power gain, and the control for increasing the receive power gain in col. 25, lines 29-52).

Regarding **claims 30, 31,** Brown teaches the constantly updating of the route information in the cache memory and receive route information for the updating the routing table from order wire, from RF control channel (col. 43, line 46 to col. 44, line 9; col. 49, lines 10-20).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pizzicaroli in view of Brown, and further in view of Wiswell et al. (US 6,205,319 B1).

Regarding **claim 2**, Pizzicaroli and Brown fail to teach the claimed features. However, Wiswell et al. (also as Wiswell in below) teaches, the comprising a beam forming network coupled to uplink and downlink antenna (front figure, the receive/transmit beam phased array 102-108, 120-126; up/down converter 110) for the selectively adjusting of the amplitude and phase antenna beam for receiving/transmitting information (abstract, col. 1, lines 5-9; col. 2, lines 27-30), using ewer multi-beam antennas (col. 1, line 65 to col. 2, line 2; col. 2, lines 8-15), such that the satellite can reduce the payload complexity, and the power requirement using fewer beam antennas. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pizzicaroli with Wiswell's fewer beam phased array antennas for receiving and transmitting, such that the satellite payload would be efficient, with less complexity and save power requirement.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pizzicaroli in view Brown, and further in view of Galvin (US 6,182,927 B1).

Regarding **claim 8**, Pizzicaroli and Brown fail to teach the satellites for LEO, MEO, GSO. However, Galvin teaches the satellites for LEO, MEO, GSO (col. 6, lines 34-54, the low earth orbit satellites 50, GEO 52, the MEOs in Fig 6) for improving the satellite navigation accuracy (col. 2, line 47). Galvin teaches the efficient method to add the augmentation satellites in LEO, or MEO or GEO, the navigation accuracy could be improved (col. 6, lines 34-37). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Thompson above and to include Galvin's adding different augmentation satellites, such that the system could be provide the navigation accuracy.

4. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Reesor (US 4, 472,720).

Regarding **claim 18,** Pizzicaroli teaches a method of configuring a satellite system (the replacing of the failing satellite with spare satellite, abstract) having a plurality of satellites (12, Fig. 1) comprising the step of deploying a reconfigurable satellite (the steps Fig. 5-6, steps 720, whether to place spare satellite in service), transmitting reconfiguration instruction to the satellite, repositioning a satellite from a network position and moving the reconfigurable satellite into the network (the commanding spare satellite to maneuver into position to provide service in col. 5, lines 41-55; step 725, give spare satellite positional target and authorization; command two satellites to spare orbit in step 750; command satellite to initiate maneuver in step 760). Brown teach the reconfiguring the frequency configuration

of the payload of the reconfigurable satellite in response to the tuning information in a routing table (the steering computer 550 in Fig. 42; and in Fig. 37, the routing information is stored in the cache memory 420, Fig. 37; the utilization of the routing table 1120 for the routers, in Fig. 85, 86; the synthesizer 284,308, in Fig. 27-28, in the reconfiguring circuit, for tuning to the frequency according to the routing table 1120). Brown considers the utilization of the on-board computer, the adaptive routing processor for selecting the best route pathway according to routing table (col. 17, line 8-42; col. 43, line 46 to col. 44, line 9). Brown provides the solution for selecting of the best routing path utilizing the route table information to change the synthesizer frequency tuning, as shown above, such that the route could be the best path. Brown teaches the solution to select the best route path utilizing the route table information to change the synthesizer frequency tuning. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Pizzicaroli with Brown's synthesizer, such that the best route path could be selected, by tuning the synthesizer.

Regarding **claim 19**, Brown taught in claim 1 the upconverter and downconverter for the changing of the up/down frequency of the up/down converters for the repeater.

Regarding **claim 20**, Brown taught in claim 1 the changing of the frequency in a programmable synthesizer (284,308; the synthesizer 560 generates signals to feed frequency controller 562 for packet switching in col. 19, lines 22-30).

5. Claims 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pizzicaroli in view of Reesor, and further in view of Brown-'621.

Regarding **claim 21**, Brown has taught above the steering antenna and phase shift (col. 14, line 51 to col. 15, line 5) and the beam forming 554/568, beam compensation (Fig. 42, col. 19, lines 15-40).

Regarding **claim 22**, Brown has taught above in claim 1 for the tuning information in the route table.

Regarding **claim 23**, Brown taught the steering antenna, phase shift, the beam compensation for the changing of amplitude or phase of a beam (the beams steering using various microstrip phase delay line in col. 14, line 51 to col. 15, line 4; the beam steering with independently controlling of directivity gain and power gain, and the control for increasing the receive power gain in col. 25, lines 29-52), and Brown taught in claim 1 above the tuning information in the route table.

Regarding **claims 24, 25**, referring to Brown in claim 1 above for the maintaining of the spacecraft's orientation for the east/west, north/south station keeping (col. 30, lines 7-20);

Regarding **claims 26, 27,** referring to claim 1 above, Brown teaches the constantly updating of the route information in the cache memory and receive route information for the updating the routing table from order wire, from RF control channel (col. 43, line 46 to col. 44, line 9; col. 49, lines 10-20).

Response to Argument

6. Applicant's arguments filed 1/21/2004 have been fully considered but they are not persuasive.

Regarding applicant's argument for the no teachings due to reference Thompson et al. (US 6,438,354 B2) belongs to assignee, Hughes Electronic Corporation. The final rejection has

been withdrawn, and the ground of rejection has been changed by utilizing new references from Pizzicaroli et al. (5,813,634).

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (703)-305-4385.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow C.C.

September 3, 2004.

EDWARD F. URBAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600